

Calculus Warm Up #12-3

Evaluate:

1) $\int \sin^2\left(\frac{x}{2}\right) \cos^2\left(\frac{x}{2}\right) dx$

2) Find the area of the region bounded by $y = x \sin x$ and the x -axis on $[0, \pi]$.

HW Questions: Pink WS

Check answers:

$$1. -\frac{\cos^4 x}{4} + C$$

$$2. \frac{\sin^3 x}{3} - \frac{\sin^5 x}{5} + C$$

$$3. \frac{1}{5} \ln \left| \frac{x-3}{x+2} \right| + C$$

$$4. -\frac{1}{2} \ln |x| + \frac{1}{x} + \frac{3}{2} \ln |x-2| + C$$

$$5. \ln |x^3 + 1| + C$$

$$6. 3 \arctan x + C$$

$$7. \frac{\pi}{2}$$

8-11 next slide.

8. $x^2 e^x - 2x e^x + 2e^x + C$

9. $-\frac{1}{2} \cos x^2 + C$

10. 4

11. Diverges.

Pink WS turned in Friday

Rest of the week:

Thurs: Test Part I, no calculator

HW: final exam review

Fri: Test Part 2, with calculator

HW: final exam review

Pink and Tan Worksheets stapled to
Warm up and turned in on Friday.

HW: Tan Review WS,
due turned in on Friday